

University News

MONDAY, MAY 31, 1993

Rs. 5.00

Sukhadia Varsity Convocation



Dr. M. Chenna Reddy, the then Governor of Rajasthan & Chancellor of Mohan Lal Sukhadia University (left), conferring the degree of Doctor of Science (Honoris Causa) on Prof. U R. Rao, Chairman, Indian Space Research Organisation, who delivered the convocation address



UNIVERSITY OF ROORKEE

Admission to Postgraduate Programmes 1993-94

1. Master's Degree Programmes (M.E./M.Tech./M.Arch./M.U.R.P.) of $1\frac{1}{2}$ Years (3 Semesters) Duration
 - (a) Department of Architecture and Planning
 - *Architecture
 - *Urban and Rural Planning
 - *Building Science and Technology (Offered by C.E. Department)
 - (b) Dept. of Chemical Engg.
 - *Advance Transfer Processes
 - *Computer Aided Process Plant Design
 - *Industrial Pollution Abatement
 - (c) Department of Civil Engg.
 - *Building Science and Technology
 - *Computer Aided Design
 - *Environmental Engg.
 - *Geotechnical Engg.
 - *Hydraulic Engg.
 - *Remote Sensing & Photogrammetric Engg.
 - *Transportation Engg.
 - (d) Department of Earthquake Engg.
 - *Soil Dynamics
 - *Structural Dynamics
 - (e) Department of Electrical Engg.
 - *Measurement and Instrumentation
 - *Power Apparatus and Electric Drives
 - *Power System Engg.
 - *System Engg. and Operations Research
 - (f) Department of Electronics & Computer Engg.
 - *Communication System
 - *Control and Guidance
 - *Microwave & Radar
 - *Solid State Electronics
 - *V Computer Science & Technology (extension programme of PG Diploma)
 - *TV Technology
 - (g) Department of Mechanical & Industrial Engg.
 - *Machine Design Engg.
 - *Production and Industrial System Engg.
 - *Thermal Engg.
 - *Welding Engg.
 - (h) Department of Metallurgical Engg.
 - *Extractive Metallurgy
 - *Industrial Metallurgy
 - *Physical Metallurgy
 - (i) I.P.T. Sharapur
 - *Pulp and Paper
3. M.Phil. Programmes of 1 year (2 Semesters) Duration
 - (a) Department of Chemistry
 - *Industrial Methods of Chemical Analysis
 - (b) Department of Mathematics
 - *Computer Applications
 - *Mathematics
 - (c) Department of Physics
 - *Instrumentation
 - *Material Science

ELIGIBILITY FOR ADMISSION

*Master's degree in Science in appropriate disciplines or B.E. degree

4. M.Tech. Programmes of 3 Years (6 Semesters) Duration
Department of Earth Sciences

Applied Geology Applied Geophysics

ELIGIBILITY FOR ADMISSION

Bachelor's degree in Science in appropriate discipline

5. M.Sc. Programme of 2 Years (4 Semesters) Duration

Applied Geology Applied Mathematics
 Biosciences *Biotechnology Chemistry
 Physics

ELIGIBILITY FOR ADMISSION

Bachelor's degree (Three years course) in Science in appropriate disciplines

*Sponsored by Department of Biotechnology, Government of India

6. University Diploma of 2 Years (4 Semesters) Duration

Pulp and Paper Process Instrumentation

ELIGIBILITY FOR ADMISSION

Bachelor's degree (Three Years Course) in Science with Physics, Chemistry and Mathematics

Information Bulletin containing Application form can be obtained from the office of Assistant Registrar (Academic), University of Roorkee, Roorkee-247 667. Information Bulletin with application form for M.E./M.Tech (C.S.T.) M.U.R.P./P.G. Diploma in Earthquake/Television Technology is available on a payment of Rs. 50/- (Rs fifty each only) and for M.Phil./M.Tech (Earthscience) M.Sc University Diploma (Pulp & Paper/Process Instrumentation)/P.G. Diploma (Industrial Management) on a payment of Rs. 65/- (Rs. Sixty five only) each by University receipt/Bank Draft payable to Registrar, University of Roorkee, Roorkee, in person or by sending a self-addressed 22x30 cms envelope with postage stamps of Rs. 2.00 affixed to it. Separate application form should be filled for courses belonging to different departments. Candidates who have appeared in the final examination on qualifying degree are also eligible to apply for admission. They will be considered provisionally for admission provided they submit a certificate of having completed all examination requirements of the final qualifying examination. 20% seats are reserved for SC/ST candidates.

Last date for receipt of complete Application form in the concerned Department is June 15, 1993.

Roorkee

April 15, 1993

I. Mohit
REGISTRAR

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Editor:

SUTINDER SINGH

A VC To Be A VC

L.C. Thang*

A Vice-Chancellor died and was received at the gates of paradise for questioning before his fate could be decided. "What were you doing when living?" asked Dharmaraj.

"I was Vice-Chancellor of a University".

"That is Okay...you have suffered the pangs of hell on earth and deserve a break in paradise".

"The next arrival was put through the same questioning. 'I was Vice-Chancellor of a University for three successive terms', he replied.

"Put him in hell", ordered Dharmaraj.

"He's got into the habit".

*— Prof. Hashim Ali,
Former VC, Aligarh Varsity*

In a University set up, the Vice-Chancellor is the Chief Executive and the principal academician, who is supposed to carry panacea or magic wand to solve all campus problems. His normal interest is to strive towards achievement of the objectives of university administration, viz. excellence in teaching and research and maintain peace in the campus

On the qualities the V.C. should possess, Clark Kerr, former President of the University of California observes : "A University President (Vice-Chancellor) should be firm and gentle, sensitive to others but insensitive to himself, have vision, affability, broad perspective and be a seeker of truth where the truth may not hurt too much. He should sound like a mouse at home and look like a lion abroad" According to Herman B. Wells, former President of Indiana University, "a Vice-Chancellor should be born with the physical strength of a Greek athlete, the cunning of a Machiavelli, the wisdom of a Solomon, the courage of a lion, if possible. But in any case he must be born with the stomach of goat".

Vice-Chancellors are scholar-administrators responsible for the smooth functioning of the university in ensuring which they are assisted by an army of officers like the Registrar, Controller of Examinations and Dean, College Development and academic bodies like Syndicate (Court), Senate and Academic Council. The Syndicate decides the broad policy and the VC implements it through the Registrar. In fact, the Registrar executes the orders of the VC and looks after the routine matters and has the overall control of the university administration. The Controller of Examinations is in charge of examinations, the Finance Officer, the finance, and the Dean, the development of affiliated colleges and the UGC grants. The planning board prepares the plan for the growth of the university. The VC can be a planner and a visionary only when the university has its own funds as in the west. Where it depends on State funding, the plans run the risk of being torpedoed by the Finance Department of the government, if the VC does not toe the governmental line. This being the case, the VC has only to be the linchpin of the university administration, an effective coordinator, a ring-master, making the officers play their assigned role adroitly. He will have no worry if he has the right type of officers. He has to prove his mettle only during crisis when all turn to him for inspiration and guidance. He is therefore a crisis manager. He must be prepared to bear the cross for all the ills, real and imaginary, for which he is compensated with good salary plus very covetable perks. He should lead the university, not just manage it. He has powers, enough and more. He has no problem, if he is a stickler for rules. Otherwise, he will have no smooth sail and he becomes a problem to the university.

(Contd. on page 5)

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Return of Assessed Answer-books to Examinees for Perusal

Haribhai L. Patel*

Examination has been termed "Necessary Evil" specially by examinees. If we wish to eliminate or drastically reduce the 'evil' part, many changes are required. Several of these have been discussed in different fora and some are implemented by different universities/institutions. One of them, not practised anywhere so far, is 'Return of Assessed Theory Answer-books to Examinee for Perusal' so that he can satisfy himself about the genuineness of the assessment.

The reform is not as simple as it appears. Madan Mohan in his paper 'Shall We Return Valued Answer Books to Examinees' (*University News* 12 April 1993) has rightly cautioned against hasty decision in the matter. He has visualised 8 implications and suggested that we arrive at their solutions before implementing the reform.

Having been in the field of examination reforms for the Faculty of Medicine for several decades, a comprehensive analysis of the steps suggested is a pre-requisite for practical implementation of the reform. Therefore, before tackling the implications, let us consider certain weaknesses of the present examination system, these will have to be corrected first. Also, certain related administrative steps will have to be taken so as to serve the purpose of the reform.

(1) *It is presumed that every answer-book has been properly and fully assessed by the examiner.* This, as far as we know, is a tall order. Let us face facts (a) The examiner rarely reads the whole answer. Why? (i) Illegible writing (ii) Too lengthy answer (iii) Repetitions (iv) Time constraint and (v) too little remuneration

(b) His assessment is often far from ideal. Main reason – (v) above

Other reasons are :

- (i) He is not subject to "audit". Accountability is absent. (Re-assessment may reveal his inefficiency, but to no avail)
- (ii) He may wish to be 'popular' & hence is 'liberal'.
- (iii) His personal bias on the subject.
- (iv) Ideal answer is not supplied to the assessor
- (v) Questions may not be well-structured.

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Remedy (1) : (i) Remuneration to examiner will have to be revised upwards, enough to motivate him to read ALL matter and assess properly. The rate may be Rs. 20/- per answer-book for UG & double for PG.

- (ii) He is informed that his assessment is subject to 'audit'.
- (iii) He is informed that examinees will be permitted to have a look at the assessed answer-books.
- (iv) Ideal answers are supplied to examiners. Paper setters are required to submit ideal answers in separate sealed envelopes which are opened only after the examination is over and a xerox copy supplied to the examiner.
- (v) Assessment of 5% of answer-books are subjected to "audit" by a committee of 3 seasoned experts on the subject. (above board)
- (vi) Careful selection of Paper-setters and examiners; adjustments done according to feedback of "audit" report and examinees' responses.

(2) *Answer books are assessed but the examiner is not expected to indicate certain factors which have guided him to proper assessment*

a. Mistake/Wrong answer b. Illegible writing. c. Unnecessary repetition. d. Not examined (as per rules). e. Irrelevant writing. f. Wrong diagram. g. Out of context h. Excellent answer i. Good answer. j. Suspected copying. k. Incomplete answer.

Remedy (2) : Examiners are required to compulsorily mark the following signs by red ink. (Examinees can use only blue or black ink)

- a. Mistake : x on the text or encircle the text & put x in margin.
- b. Illegible Encircle the text and put (x) in the margin.
- c. Unnecessary repetition . Do 0 Do
- d. Not assessed : Do (-) Do
- e. Irrelevant : Do (:) Do
- f. Wrong diagram Encircle the diagram, put : I x I Do
- g. Out of context : Encircle text, put (^) Do
- h. Excellent answer Do (=) Do

- i. Good answer : Do (+) Do
- j. Suspected copying : Do (c) Do
- k. Incomplete answer put (<) at the end.

The signs may be different from those given here; what is required is ease of marking and clarity. Self-inking stamps may be prepared and given to examiners to facilitate the work; of course encircling has to be done manually.

By these signs (i) "audit" team can assess the quality of assessment.

(ii) Examinee can see for himself positive and negative aspects of his answer; the basis of marks obtained.

Added advantage of this system : During re-assessment/second assessment the other examiner can check the genuineness of the assessment. If required he may ADD signs in green ink.

(3) *Original seat number of the candidate is covered and new Code number is written/stamped on each answer-book and each supplementary answer-book.* There is no provision to put back original seat number on answer-book. Certain supplementary answer-books may get separated after/before assessment. In rare instances, whole answer-books may be missing.

Remedy (3) All persons handling answer-books have to meticulously follow the procedure prescribed .

(a) Total number of answer-books must be mentioned on the front page; the supervisor has to confirm this before the candidate is allowed to leave. The supervisor then securely staples all answer-books.

(b) Main answer-book should be large enough to accommodate average answers. As a result few candidates will take supplementaries.

Once candidates realise that long answers do not bring them more marks, they will tend to answer to the point and stop filling pages.

(c) Code numbers are put on main answer-book only.

(d) Space is provided below Code-numbers to stamp/write original seat numbers after completion of assessment/s. The examinee is thus assured that there is no mistake in coding and de-coding. This transparency breeds credibility for the system.

(e) At every stage, answer-books will have to be carefully checked before accepting or handing over by university staff, examiners and examinees.

(4) *Presently the examiners, while assessing the answer-books, put marks at the end of every question or sub-question and totals up. Also he fills up question-wise tabulation of marks on the first page of the answer-book.* Once more he has to copy this on the result-sheet. This time-consuming triple work is :

- (a) Clerical in nature.
- (b) Unnecessary.
- (c) Prone to mistakes.
- (d) Coming in the way of re-assessment or second assessment process when required.
- (e) A hindrance to coding process : marks put all over the answer-book require to be covered - a tedious and time-consuming process.

Remedy (4) : The procedure may be modified thus :

(i) The examiner does not write marks in the answer-book at all - not even on front page. He only records marks in the result-sheet. The result-sheet is designed in such a way that there are columns for questions OR sub-questions (not both) and total. Example :

Code No.	Q.1	Q.2a	Q.2b	Q.2c	Q.3	Q.4a	Q.4b	Q.5	Q.6a	Q.6b	Total
Maximum marks	15	5	5	5	20	10	10	10	10	10	100
7354	3	2	1	4	11	7	5	3	8	3	47

(ii) Marks obtained are fed in the computer, which totals them up. This total should tally with examiner's total.

(iii) Detailed mark-sheet is supplied to every candidate. Of course the fees for Mark-sheet and Detailed mark-sheet are collected with examination fees. While going through the answer-books the examinee keeps this Detailed mark-sheet with him so as to appreciate marking in each question. The mark-sheet also contained his seat number and Code number, both of them tallying with those on the answer-books. (Seat number will remain the same but Code numbers will be different for different answer-books.)

(iv) For postgraduate examinations two assessments are done. Average of the two are taken for the purpose of results. Computers, properly programmed can easily perform the processing.

(v) Provision for re-assessment is deleted. It would now be unnecessary as the student will recognise the transparency. Also the malpractices alleged due to re-assessment procedures will vanish.

(5) *Presently there are cumbersome rules which lead to troublesome time-consuming administrative procedures and great probability of manipulative malpractices.*

(a) If an answer to a question is interrupted and continued on some other page, the examiner is obliged to assess that answer also; generating avoidable annoyance and waste of time

(b) If an answer relates to Section other than what the examinee has indicated on his answer-books (according to which it is sent to the concerned examiner), the examiner is required to assess it and add remarks to that effect. He has not assessed these answers of any other

candidate and hence the assessment is totally out of context. Sometimes the Section is altogether on a different subject!

(c) If there are options, the candidate is permitted to answer more than required questions. In that case, the examiner is required to assess ALL answers and highest marks of required number of questions are taken into consideration. This leads to confusion and extra labour; further it encourages the examinee towards unhealthy practices.

Remedy (5) : All these provisions, apparently kind to students, encourage wrong habits for the examinee. Further it may lead to gross injustice, identification of the candidate, scope for manipulation and cumbersome administrative procedure, dislocating time-bound schedule of declaring results. All these rules, therefore, must be scrapped and replaced by :

(a) The answers must be continuous. Any interrupted answer will be considered terminated at that point and further writing on another page will be ignored

(b) Any answer not related to the correct Section shall not be assessed; it will be deemed to be non-answer.

(c) If the candidate has written more answers than required as per option, the last answer/s beyond required number shall be ignored

(d) If a candidate has not indicated the question number to which the answer is related or given wrong or illegible number, it shall be considered non-answer & shall not be assessed.

Once all these changes have been implemented, we can start the reform of returning the answer-books to examinees for perusal, one faculty at a time. Later, after gaining experience, it could be extended to other faculties gradually. Perhaps, being small and important, Faculty of Medicine may be taken up first.

The implications mentioned by Madan Mohan in his article may be tackled asunder :

a) *Will it be desirable to continue with the present system of marking scripts with fictitious roll numbers before referring the same to examiners for evaluation.*

Code numbers may continue. If original seat numbers are from 1 to 3000, Code numbers should be from 5001 onwards. This way we can instantly know whether the particular number is Seat number or Code number. Also, after completion of assessment/s, original seat number is written/stamped on the answer-book at the specific place. The Detailed Marksheets also contains both numbers.

b) *Will it be fair to ask the examiners to put their signatures on the answers books in token of having*

evaluated the same, and thus disclose their identity to the students whose scripts they have evaluated?

The examiner is not required to put his signature on the answer-book. In fact he does not even put marks there; only signs to indicate process of assessment.

c) *With the mass of answer books to be returned to individual candidates, will it be possible to evolve a mistake-free system of distribution of scripts to Examinees either through colleges or directly to them?*

The answer-books cannot be returned to the examinees permanently. They may be given time to come to a designated place where university authorities hand over the answer-books (one at a time) to the examinee for perusal only. This is to be done in presence of responsible University Official. About 5 candidates may be allowed at a time. Maximum time limit should be prescribed, say 15 minutes. The candidate must carry his identity card with photograph to avail of this facility

d) *How will the candidates be compensated in case of a missing/misplaced answer book, to his/her satisfaction?*

Due to precautions taken, such instances will not take place. If rarely some answer books are found missing, the responsible must be punished.

e) *What will be the modus operandi of such a distribution in respect of External Candidates, Non-Collegiate Women Candidates and the students belonging to the School of Correspondence Courses and Continuing Education in Delhi, outside Delhi (in India) and abroad?*

All who wish to see the answer-books must come to the designated place.

f) *In the event of an examinee not being satisfied with the marks awarded, there has to be some machinery to redress his/her grievance. Such a machinery could be in the form of other teachers or some members of the department, being appointed to re-judge the answer book. Will such an arrangement not give rise to allegations/controversies of inter-personal nature, within the members of the department?*

For a year or two, this is only an opportunity to see, no changes in assessment are permitted. Only examinees' responses are elicited and compiled for necessary action. Later, perhaps, the method may prove so satisfying that no further action is necessary.

g) *Once the marks awarded by the examiner get raised in a few cases, will the reputation of the teacher not be adversely affected? In other words, the concerned teacher being subjected to an open examination of the evaluation done by him/her, will many teachers be available to act as examiners under this constraint?*

Question does not arise.

b) What will be the method to ensure that for the period an evaluated answer book remains in the custody of the candidate, there will be no unfair means used by him/her of adding to or deleting the answers or parts thereof, previously written, or of writing fresh answers and then claiming that the same had not been evaluated during the original valuation.

See (c)

This reform of showing assessed answer-books to examinees would improve the examination process to a large extent. It introduces transparency in the process and therefore credibility of examination is enhanced. Coupled with other examination reforms, this step may lead to reversal of the label of necessary 'evil' for examination system. There is only one condition : we cannot afford to leave loose ends. Some difficult decisions are pre-requisite e.g.

(1) Examination fees will have to be greatly increased, say Rs. 1000 minimum + Rs. 60 for mark-sheets & Rs. 40 for identity card with photograph. Actually this is merely removal of subsidy which should have been done long back in the field of higher education.

(2) Accountability coupled with proper remuneration for examiners, university workers, supervisors and others at all levels.

(3) Use of computer and correct software.

It would surprise many but the student community will welcome it as a package deal!

References

- 1 Madan Mohan. Shall we return valued answer-books to examinees? University News 12 April 1993.
- 2 Patel, Haribhai L. Reforms in examination system. Indian Journal of Medical Education XXVII. 2 (1988).

A VC To Be A VC

(Contd. from page 1)

In the early years of free India, academic stalwarts of unquestionable integrity and acknowledged reputation like Sir Asutosh Mookerjee, Drs A L. Mudaliar, C.P. Ramaswamy Iyer, S Radhakrishnan, C.D Deshmukh, V.K.R.V. Rao and M.V. Mathur were nominated as Vice-Chancellors, not for their political affiliations or caste or contacts but for their proven administrative ability. They never sought after such high posts; but the powers that be sought after them to accept the posts. Such doyens really lent lustre to the post. There were days when universities came to be rated in tune with the personality of the vice-chancellors.

Of late, a vastly different and not-altogether-happy situation has emerged in the academic world to the disenchantment of the truly academically inclined. Barring very few exceptions, the post of a VC is more a political appointment determined by extra academic considerations.

It is said, vice-chancellors of today hold power in nervous hands. "VC is like the Samson with ants in his pants". Dr. K. Venkatasubramonian, former VC of Pondicherry University, says thus; "with government nominees headed by the Education Secretary in majority, the Vice-Chancellor who is supposed to be the Chairman of the Syndicate, is like the King in a pack of cards with all colourful regalia and no power" There were instances when the VCs were branded "inefficient"

for not being 'yesmen' to government. Naturally the post of VC has no charm and does not easily attract academicians with individuality

Even for the posts of Pro-Vice-Chancellor, Registrar and the like, right candidates are not available. Senior Principals and Professors are not enamoured of these posts because they lose their individuality in merging with the machine as mere cogs. While in charge of a college or a department, their writ ran uninterruptedly in their domain of activity; once in the university, they vanish into thin air, occasionally becoming scape goats. The suggested induction of IAS Officers into university administration will bring no relief; the suggestion stems from our magnificent obsession of viewing the IAS Officer as an all-knowing genius, the myth of which stands exploded in the modern world.

With no guarantee for security for service and self-respect and the demoralising tight-rope walking pronounced, real scholars think twice before accepting vice-chancellorship. The Bihar Government had gone on record for having removed VCs en bloc overnight. They had to leave "unwept, unhonoured, unsung".

Thus what the argument boils down to is that in the present scenario, a VC rid of his administrative work will stand reduced to a non-entity. So, a VC to be a VC should leave his imprint unmistakably on the administration; as the VC, so the university administration.

Education for Social Harmony

G.B.K. Hoop*

During the course of discussions at the 43rd session of the International Conference on Education held in Geneva last year, the delegates appreciated the enormous progress that various countries had achieved, both through the government and through non-governmental organisations, in transforming educational systems and linking their policies with the requirements of cultural and economic development. To accomplish this, national efforts seemed to stress the following five aspects :

- the need to stimulate innovations and the internal creativity of the national educational system;
- concentrating on activities in favour of disadvantaged groups;
- giving priority to policies directed towards teachers, who are seen as the most important multiplying agents in the change process;
- institutional reform intended to decentralize educational administration and to grant more autonomy and creativity to individual educational institutions,
- the widest possible participation of everybody concerned in the definition of curricular guidelines.

As we know, here in India, a new National Policy on Education was adopted in 1986 and a new National Policy on Culture is on the anvil. In both of these exercises, the cultural consequences of education and the educational needs of culture have been duly kept in mind. It is appreciated that the existing gap between the formal system of education and the country's rich and varied culture and traditions needs to be bridged. Deculturization, dehumanization and alienation have to be avoided for a balanced educational system. In this context, a comprehensive and well-integrated plan of action is under preparation. The intention is that, at all levels of education from primary to higher education, the cultural input be strengthened. As many as 75 concrete steps have been proposed, while leaving enough space for innovation and initiative at the local level. These measures include : orientation of teachers;

updating and upgrading curricula; use of inexpensive and relevant materials for cultural exposure; the promotion of the concept of neighbourhood culture involving the active participation of the community; the participation of various cultural workers in education, whether they belong to the traditional or modern sectors; arousing students' curiosity about their local surroundings and sensitizing them towards beauty, harmony and refinement. It is believed that the vast creative community of India, which includes classical artists, writers and folk performers located in thousands of villages, would enthusiastically provide their assistance and support. The roles of various organizations involved in this gigantic task have been clearly defined, including : the National Council of Educational Research and Training, the Zonal Cultural Centres, the National Cadet Corps, the National Service Scheme, the Nehru Youth Centres.

This is as good an educational agenda as could be framed by any enlightened and cultured groups of leaders. Delivery agents have been identified as well. However, if we take a look at past experience, scepticism may yet well be justified.

It will be noted that among measures to be adopted for the implementation of the programme, two items (a) orientation of teachers, and (b) upgrading of curricula, are principal. These represent gigantic tasks, bearing in mind the numerical strength of the cadres of teachers at various levels. And any programme to orientate them shall have to take into consideration the teachers' in-born sense of pride and latent prejudices, inertial rigidity and inflexibility of mental habits, socio-economic barriers and other numerous psychological factors which serve to dampen motivation and to deculturize one.

The first step, in any case, would be the training of the trainers; this by itself is a formidable order. All this, however, is not new. For years, we have talked in these same circles, and we still seem to be doing that mostly, just talking. Alice finds herself standing where she was, if not sliding backwards, despite decades of apparent movement and much verbal rhetoric.

At the time of the presentation to the Education Minister of the report of the Education Commission (1964-66), appropriately titled 'Education and National

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Development', Commission Chairman, Dr. D.S. Kothari, said the following : "The single most important thing needed now is to get out of the rigidity of the present system. In the rapidly changing world of today, one thing is certain : Yesterday's educational system will not meet today's need, and even more so, the need of tomorrow." He then went on to enumerate the salient recommendations made in the report, which *inter alia* included :

- introduction of work-experience (manual work, production experience, etc.) and social service as integral parts of general education at more or less all levels of education;
- stress on moral education and inculcation of a sense of social responsibility. Schools should recognise their responsibility in facilitating the transition of youth from the world of school to the world of work and life,
- vocationalization of secondary education;
- special emphasis on the training and quality of teachers for schools

Significantly, the opening paragraph of this mid-60's report reads as follows .

"The destiny of India is now being shaped in her classrooms. This, we believe, is no rhetoric. In a world based on science and technology, it is education that determines the level of prosperity, welfare and security of the people. On the quality and number of persons coming out of our schools and colleges will depend our success in the great enterprise of national reconstruction, the principal objective of which is to raise the standard of living of our people."

In the context of national reconstruction, the Commission pointed out that it was the responsibility of the educational system to bring different social classes and groups together, and thus, promote the emergence of an egalitarian and integrated society. Notwithstanding this enjoinder, up to the present, education has rather tended towards increase of social segregation and perpetuation and widening of class distinctions. The current position of education is thus, frankly, undemocratic and clearly inconsistent with our constitutional ideal of an egalitarian society.

To make the educational system a powerful instrument of national development, the Commission stressed that we must move towards the goal of a common school system of public education. Little irony that, over the intervening 25 years, we have moved counter to this direction.

As regards the promotion of social, moral and spiritual values, the Commission referred to recommen-

dations of the Sri Prakasa Committee appointed by the Central Advisory Board of Education in 1959, observing that despite the fact that this report had been before the country for 5 years, the evident response of educational institutions was not at all active, let alone enthusiastic. "This is having a very undesirable effect on the character of the rising generation" lamented the Commission. Sad to say that another 25 years have passed and we are still not within sight of demonstrating interest, however marginal, in this vital programme. Particularly let us note that the Kothari Commission recommended that a general study of the different religions of the world be included as part of the first degree course, and that a graded syllabus be prepared for this purpose. "We would also like to lay stress on the importance of encouraging students to meet in groups for silent meditation," said the Commission.

On the topic of secularism and religion, the Commission was very clear-sighted. While appreciating that in a secular state, no religious community may be favoured or discriminated against by the State, and that instruction in religious dogma may not be provided in state schools, it held that secularism was not an irreligious or anti-religious policy nor did it belittle the importance of religion as such. What it does is to give every citizen the fullest freedom of religious belief and worship. The Commission made a distinction between "religious education" (proscribed to the state) and "education about religions" (prescribed by the state). It defined the latter as a study of religions and religious thought from a broad point of view – the eternal quest of the spirit, and suggested that a syllabus giving well-chosen information about each of the major religions should be included as a part of the course in citizenship to be introduced in schools and colleges up to the first degree. "It would be a great advantage to have a common course on this subject in all parts of the country and common textbooks which should be prepared at the national level by competent and suitable experts on each religion," said the Commission. It proceeded to say, as well, that, "A vitalised study of science with its emphasis on open-mindedness, tolerance and objectivity would inevitably lead to the development of a more secular outlook amongst those who profess different religions. This process needs to be carefully and wisely encouraged... This is what we envisage as the direction of our future development. We believe that India should strive to bring science and the values of the spirit together and in harmony, and thereby pave the way for the eventual emergence of a society which would cater to the needs of the whole man and not to a particular fragment of his personality."

(Contd. on page 13)

Motion Pictures as Source of Information

The Acquisition Problems for Indian Universities

Amjad Ali*

Introduction

The mankind has preserved knowledge gained through experiences to pass it on to posterity. Different kind of materials; stones, clay tablets, leaves, cloth; parchment; vellum, etc. have been used for this purpose depending upon the availability of the materials and man's capability to use them. The rate of shifting from one material to the other has been very slow and in consonance with the transition in the society as a whole. The invention of paper from papyrus in Egypt around two thousand years ago was perhaps the biggest gift to mankind. For centuries, this medium has made all forms of learning and research possible.

Paper coupled with the moveable types invented in the 15th century accelerated the rate of growth of the recorded knowledge. It was a cheaper and easily available medium and even mass production was not difficult. From this invention onwards, the quantum of publication was so high that whatever number of books the whole of Europe could have brought out till the 15th century was produced within a year of this invention. Paper became an indispensable reality in every civilized society ever since.

The technological advances in photography, sound and picture recording and reproduction, telecommunication and increasing computer and satellite networks have on the one hand made available a wide range of products for recording and retrieving information; on the other hand they have affected the nature of man's perception. The senses of vision and hearing now play a major role in the learning process. We cannot think of any society not being affected by these changes. As a result of this technological development, newer media like photographs, microfilms, gramophone records, discs, cinematographic films, audio and video, etc. have emerged and are being adopted for preservation and retrieval of information.

Motion Pictures

Motion pictures are now available on cinematographic film as well as on video. Their basic and common characteristic is the movement of picture on the screen. The movement is achieved by running film or video through a projector or player at a speed of 24 frames per

second. The stills are recorded in a situation where all of them are comparatively similar and differ only at the point where movement has to be visualized. Motion pictures include silent and sound films as well. Nowadays, nearly all of them are being recorded in colour.

(a) Cinematographic Film

Cinematographic film consists of a transparent flexible support or base on which is laid a photosensitive adhesive emulsion. They are now available in different widths ranging from 8 mm to 70 mm. The more the width the higher is the cost of the film. They are used for varied purposes depending upon the cost and the quality of the film. The super 8 mm is used very rarely as the infrastructure for production on this format is not generally available. But this is certainly the cheapest cinematographic medium available so far. The 16 mm film is used by most of the institutions for education and development. This has advantage over 8 mm because of comparatively higher resolution being suitable to be magnified on slightly larger screen. Both the 8 mm and 16 mm are used depending upon the size of the audience as well as the cost of the production involved. The 35 mm and 70 mm films are normally used for entertainment and commercial purposes. They are suitable for larger gatherings like the audience of feature films in cinema halls. The advertisement agencies produce ads on these formats. The advantage of their having larger width is that the picture contains very high resolution and does not blow up while magnified on larger screens. Sound for cinematographic films can be recorded magnetically or optically depending upon the circumstances.

(b) Video Recordings

Video is basically a picture and sound recording medium. It is also cheaper in comparison to the cinematographic film. The great advantage of this medium is its instant playback facility. Video Productions are generally available on video tapes and video cassettes. Their width vary from super 8 mm to 2". VHS is the most suited format for home viewing and a small gathering. The formats of video are changing very fastly. In India, within a decade the production studios have witnessed reel to reel videotapes, 1" BCN, 3/4" U Matic in low and high band and currently the Betacam in 1/2". There is also a possibility of shifting the medium to digital in the coming times since this format has certain advantages over the existing ones.

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Acquisition

Acquisition covers the functions of selecting, ordering and receiving films in the libraries. There are not many agencies in the country dealing with the production and distribution of the educational films. Recently some agencies like the Electronic Trade and Technology Ltd. (ET&T) have come into existence. ET&T is followed by the National Education and Information Films Ltd., Bombay. Some organizations market their own productions on demand. Selection can be made from the catalogues of the production agencies or from some other reference sources like the Video Source Book or from the lists of the distributors itself. Some periodical publications carry reviews on motion pictures. Even in Indian publications we come across such references. Once selected, ordering and receiving is not a problem if the films have to be procured locally. But we always need films from the foreign countries for the specialized groups of learners. For this, we have no other way but to import the films.

Import Policy

For granting clearance to a consignment coming from abroad, Customs authorities have a twofold function to perform, (a) to see whether the import is permitted under Import Trade Control Regulation laid down by the Ministry of Commerce, and (b) to assess Import Duty as prescribed by the Ministry of Finance Notification No. 305/87-Cus, whereunder educational videos imported for a university or college are exempted from levy of duty. As regards the first aspect necessary Import Trade Control Regulations appear in the Import Policy Book. The 1990-93 Import Policy Book provides for the import of educational films/videos under Open General Licence under two different sections :

(a) Serial No. 36 of Appendix 6, List 8, Part ii appearing on page 241 whereunder import of educational and instructional films or videos is allowed freely by all persons provided the films/videos imported are certified as 'Predominantly Educational' (PE) by the Central Board of Film Certification (CBFC).

(b) Serial No. 7 of Appendix 6 (Page 173) allows import of educational films or videos freely by all recognized educational institutions and government departments subject to Condition No. 41 appearing on page 188 that the films/videos imported are Predominantly Educational by the Central Board of Film Certification.

One fails to understand that when under the provision cited under (1) above, all persons (it is to cover recognized educational institutions and government departments, etc. also) are allowed to import educational films/videos provided the same are certified as 'PE' by CBFC, why a separate provision cited at (b) above had to be made for the same purpose, specially for educational institutions and government depart-

ments and that too on the same conditions of 'PE' certificate being obtained from CBFC.

It appears that the condition of obtaining 'PE' certificate from CBFC under provision (b) above has been inserted inadvertently as otherwise there was no need to have a separate provision for educational institutions and government departments.

Recognized educational institutions and government departments should be considered competent enough to certify the 'PE' nature of a motion picture as they all have subject experts on their staff and hence there should be no need for them to have to approach CBFC for such certification since after all CBFC itself issues certificates only at the recommendations of two of their panel members drawn from the public life and who are usually not subject experts.

Further procedural formalities involved in obtaining CBFC certificates like submitting applications, arranging of screenings under custom escorts and so forth are too cumbersome and obviously unnecessary to be gone through for a recognised educational institution or a government department. Being themselves the actual users of the materials, they should be exempted from being required to obtain 'PE' certificate from CBFC. In fact, the concerned institutions and/or department should be considered as equally, if not more competent to judge the 'PE' nature of the motion pictures required by them.

Recently, a distributor of motion pictures from U K sent a catalogue to the Mass Communication Research Centre, Jamia Millia Islamia, New Delhi, listing a large number of films which are available on video. The Centre was anxious to import 103 titles out of the catalogue. These films are treated as feature films in India whose import is allowed with very heavy import duty. An educational institution cannot afford to pay such duty. The Mass Communication Research Centre is purely an academic institution and not engaged in any kind of commercial activities. The cassettes were solely meant for the education of students in the art of film production. Despite repeated efforts to import them, the Centre could not obtain them because of the current import policy.

Conclusion

Motion pictures are being accepted increasingly by the academic circles as a learning aid as well as the medium for preservation of information. In India, we always need good instructional and enrichment films available in the international market. But there are hurdles in their import even for the academic and research purposes. This requires urgent attention of all concerned so that motion picture can also be imported like books for the purpose of education and research. Moreover, just as there are renowned authors so are there well known film makers who have a series of worthwhile films to their credit and which could be an intrinsic part of every library.

Needed A New Breed of Statesmen

"If the colonial exploitation was responsible for keeping this country stagnating in the past, the socio-political system evolved in the last two decades, has virtually crippled the country, using every means – language, caste, creed, colour, religion – to divide the country, seeding distrust between man and man and neighbour and neighbour. Rampant corruption, nepotism, unrest, intolerance, selfishness and violence bred by the socio-political system have brought the nation to a grinding halt. What is badly needed is a new breed of statesmen who will restore back to our vocabulary, the words – duty, pride, honesty, sincerity, dedication and honour without such a suggestion being treated with sarcasm or scorn", observed Padma Bhushan Prof. U.R. Rao, Chairman, Space Commission and Secretary, Department of Space, Govt. of India. Prof. Rao was delivering the Convocation Address at the annual convocation of Mohanlal Sukhadia University, Udaipur. Excerpts

You are the product of Space age who have witnessed the extraordinary scientific achievements which have enabled the scientists to reach the very end of our universe and trace our heritage back to the very beginning of time. It is Space exploration which revealed for the first time, the magnificent panorama of the hitherto totally hidden aspects of the cosmos filled with exotic objects such as pulsars, quasars, neutrons, stars and black holes, where gravity rules the entire matter and Space and time have lost their identity. Even more spectacular is the unleashing of the vast and unlimited potential benefits of Space technology which already extend over communication, meteorology, TV broadcast, education, agriculture, industrial growth, resource management, environmental protection, disaster mitigation, flood and drought management, health and entertainment virtually touching every facet of human endeavour.

Mind boggling as the discoveries in the last few decades are, the true benefit of Science and Technology still eludes a large part of the peoples, particularly in the so called

developing world sustaining 80% of world population but consuming less than 20% of world resources – the world constantly plagued with problems of malnutrition, hunger, illiteracy, inadequate health care, poor infrastructure, lack of capital resources and an abysmally low standard of living.

Indian Scene

Notwithstanding the spectacular progress achieved in some selected areas of science and technology such as Space, atomic energy and agriculture, the overall impact of science and technology on the common man in India has been rather marginal. While the green revolution has enabled the country to increase its food production from 55 to 175 mt in the last four decades, the available food per capita has remained practically unchanged, leaving a large body of nation's population barely at survival level, just adequate to hold their body and soul together. In spite of the green revolution, the agricultural productivity in the country is just about 1.5 t/ha as against the world average of 2.5 t/ha and over 5 t/ha in developed countries.

Large scale deforestation, resulting in severe soil erosion, increase of wasteland and sedimentation of river beds and lakes have become a cause of recurrent floods and drought, with untold misery to human lives and livestock. The available land resource in the country has shrunk to a mere 0.17 ha/capita, which can barely support the present food requirements of the country, let alone meeting the targeted annual requirement of 220 mt by the year 2000. In spite of the country being blessed with a large amount of rain, indiscriminate wastage of water resources and grossly inadequate conservation practices have led to excessive increase in soil salinity and severe water shortage. Pollution of lakes and environment around Udaipur, expanding desert in Rajasthan, nonavailability of even drinking water in many of our villages and the degradation in the quality of life in our rural areas, have become standing monuments to our mismanagement capacity.

While one out of every two persons has access to a telephone in the developed society, available communication facility even in metropolitan cities of India is less than one for every 100. The picture in the rural areas is even more dismal, with over 2,000 persons having to compete for access to a single telephone. In spite of the large increase in the number of universities and colleges, over 30 percent of our population will continue to remain illiterate even by the year 2000, unless we tackle the problem of illiteracy on a war footing. It is shocking to note that almost 6 million children, over 40 percent of global infantile mortality rate, die every year, in just three countries, India, Pakistan and Bangladesh, and almost seven times this number, continue to suffer from malnutrition.

In summary, a substantially large part of our countrymen still live well below the poverty line, unemployment of even the educated is on the increase, the industrial growth has been unable to initiate a revolution, and the educational system has remained stagnant, unable to produce innovators, scientists and technologists who can strike new pathways.

How did this Happen ?

How did our country, with a long and established scientific tradition initiated by great teachers like Aryabhata, Varahamihira, Sashrutha and Bhaskara, a country which today boasts of having a third of world scientific community, degenerate into this sorry state of affairs? The answer partly lies in our rigid application of religious dogmas and social attitudes which have crippled the very spirit of scientific enquiry, chaining our society to the relics of the past unable to adjust itself to the dynamic challenges of the technological future. Three centuries of colonial rule only made this nation to lose its faith in itself, its glorious past, its cultural heritage and imbibe a spirit of inferiority complex and self-diffidence.

The entire credit for the resurgence of modern scientific temper in India goes to Pandit Jawaharlal Nehru, who expressed his basic faith that "Science alone could solve the problem of hunger and poverty, insanitation and illiteracy, of superstition and deadening custom and tradition, of vast resources running to waste, of a rich country inherited by starving people" The 1958 Scientific Policy Resolution enunciated by him that "It is an inherent, obligation of a great country like India with its tradition of scholarship and original thinking and its great cultural heritage, to participate fully in the march of science, which is probably mankind's greatest enterprise today", which put the na-

tion back on the path of industrial progress.

Notwithstanding this initiative which enabled the country to make rapid, significant progress in selected areas of science and technology, prevailing unrest in the country, during the last few years has again seriously affected our national development. If the colonial exploitation was responsible for keeping this country stagnating in the past, the socio-political system evolved in the last two decades, has virtually crippled the country, using every means – language, caste, creed, colour, religion – to divide the country, seeding distrust between man and man and neighbour and neighbour. Rampant corruption, nepotism, unrest, intolerance, selfishness and violence bred by the socio-political system have brought the nation to a grinding halt. What is badly needed is a new breed of statesmen who will restore back to our vocabulary, the words – duty, pride, honesty, sincerity, dedication and honour without such a suggestion being treated with sarcasm or scorn.

What should be done to make progress ?

Behind the veil of the seemingly unsurmountable problems the country is facing, I am convinced that we can see the awakening of a new dawn, if we are determined to utilise the available and emerging powerful scientific tools. It is only through the harnessing of alternate energy sources, utilisation of the advancements taking place in material sciences, biotechnology and genetic engineering and exploitation of the unlimited benefits from Space technology that we can create a dynamic new industrial base in the country.

Space communication has already revolutionised the communication scenario in the country by linking for the first time the remotest rural corner with the mainstream of the nation. Business

communication with small V-sat terminals, emergency communication, disaster warning system saving thousands of lives and livestock, rural telegraphy, nationwide radio networking and TV broadcast have all become a reality within a short span of a decade because of INSAT systems. The spectacular revolution in TV broadcast, from a mere 11 TV transmitters to over 540 transmitters, providing access to almost 80% of our countrymen could never have been achieved without INSATS.

Likewise, the vital inputs from Space technology with its ability to provide instantaneous, rapid, repetitive and large area coverages has become the single most important tool for optimal management of our natural resources. Imageries obtained from our IRS satellites are now regularly used for monitoring major agricultural crops, identification of reclaimable wastelands, advance prediction of drought, exploration of new mineral resources, location of areas of large fish shoals in the ocean, urban planning and forest monitoring. Space technology has become an invaluable tool for locating underground aquifer potential which has assisted, in particular, thousands of villages in Rajasthan, Gujarat, Madhya Pradesh and Maharashtra. Our understanding and prediction of weather and climate has taken a quantum jump with the availability of weather pictures. Combined with the disaster warning system, Space technology has become an important tool in mitigating flood and cyclone disasters, saving thousands of lives and livestock.

The utilisation of Space technology for achieving sustainable integrated development is now emerging as a very powerful tool for rapid transformation of static rural societies. Combining the information derived from Space on soil characteristics, forestry, agriculture surface water, underground water potential, agro climatic status, wasteland culturability and meteorologi-

cal information with socio economic factors, it is now possible to come up with appropriate developmental strategies and implement them at micro level for achieving integrated sustainable development. Utilisation of Space technology for large scale improvement of rural education, particularly women's education and continuing education, form essential ingredients of the holistic approach to tackle the fundamental problem of inequity. Only when we replace the present beneficiary oriented arbitrary method with an integrated approach of total system planning and optimal management using integrated sustainable development strategy at village level, we will be able to initiate a new green revolution to meet the basic needs of the present and future generations.

The abysmally low energy consumption of just around 0.2 tons coal equivalent per capita in India, one fiftieth of that in advance countries, clearly demonstrates the need for increased energy for removing the industrial backwardness of the country. With adequate priority being provided, exploitation of cheaper and alternate energy sources such as solar, wind, tidal and nuclear is realisable, a judicious mix of all of which are essential to meet our growing energy demands. Our food production can easily be doubled when we make our agriculture energy intensive, adopt site specific strategies with inputs from Space technology for optimal management of land and water resources and use better seeds and fertilizers through intensive research in bio-engineering. Substitution of new cheaper materials for large scale construction and development of low weight high strength alloys and composites for high technology industrial activity can make our industries internationally competitive. Experience in Space and Atomic Energy have clearly demonstrated that we can achieve spectacular progress, comparable in quality to the best anywhere in the world,

when our excellent technical manpower is backed up by strong leadership.

Availability of technological solutions and new tools can fructify and create a better future for the coming generations, only when it is backed up by political will and social commitment. Social transformation can only occur when the society as a whole imbibes the scientific temper and is able to accept new ideas. In an age of rapid technological obsolescence, practical realisation of a socio-cultural revolution can only occur when our educational system frees itself from its present state of stagnancy and is able to impart knowledge for creating a dynamic technological society. We cannot remain merely satisfied by recalling our ancient cultural heritage and glorious past for history. We must recognise that history should be used only as a lesson from the past charting our future, to avoid mistakes and pitfalls and it is only when we write history and not merely read it, that we can create a better world.

University Education

Prevailing educational system in our universities saddled with outdated curricula and rigid compartmentalisation, which is unable to appreciate the interdisciplinary character of nature, can hardly produce motivated students, who can understand the cybernetic relationship embodied in science and technology. Our universities which ought to be "a place of light, of liberty and learning" have degenerated into poor manufacturing outfits for injecting second hand capsuled knowledge and its faithful reproduction in an archaic examination system. We have to realise, to quote Alvin Toffler, "The technology of tomorrow requires not millions of highly lettered men, ready to work in unison at endlessly repeated jobs, not men who take orders in

unblinking fashion, but men who can make critical judgements, who can weave their way through novel environments, who are quick to spot new relationships in the rapidly changing reality"

The fundamental responsibility of a university which is to encourage creativity and original ideas can only be accomplished with dedicated teachers, who can train the youth to think rationally, reason logically and not be afraid of accepting new ideas. In the word of John Ruskin "Education does not mean teaching people what they do not know. It means teaching them to behave as they do not behave. It is not teaching the youth the shapes of letters and the trick of numbers and leaving them to turn their arithmetic to roguery and their literature to lust. It means, on the contrary training them into the perfect exercise and kingly continence of their bodies and souls. It is a painful, continual and difficult work to be done by kindness, by watching, by warning, by precept and by praise, but above all by example". Mediocrity in our educational system can only multiply mediocrity and cannot create excellence.

Real progress can never be achieved without industries having a strong organic linkage with the universities and technology institutions. Unless the prevalent kit culture, which has made industries to continuously rely on transfusion from elsewhere for their survival, is replaced by strong R and D inputs from academic institutions, industry can never become vibrant, dynamic and forward looking. This can only happen when our universities are enabled to carry out high quality research and industries are made to dynamically interact with academic institutions.

Excellence in institutions of higher learning can only be sustained when highly motivated teachers are employed

and they are encouraged to carry out top quality research and development. This implies that higher education has to be essentially, elitist, involving the best students and teachers, which alone can produce quality scientists and technologists and not mere laboratory technicians. If in spite of the serious lacuna in our educational system the growth of science and technology in at least a few selected areas in India has been very impressive and of world standard, it is clear that our younger generation is second to none and through them we can recapture the glory of the country only if we can bring in selectivity, emphasise quality and provide a conducive atmosphere in our universities for the growth of originality. What the universities and our teachers have to do is to essentially train the younger generation to be, innovators not imitators, planners not paper pushers, job creators not job seekers and thinkers but not followers. It is only when every one of our University graduates can confidently repeat the statement of

the great French philosopher Descartes "Cogito, ergo sum or I think, therefore I am", our society will become a dynamic, living society.

Conclusion

My young friends you are the chosen generation, on whose shoulders destiny has thrust upon the responsibility of leading this country through to the next century. The greatest hindrance for the progress of humankind, individually or collectively, has not been ignorance but a false perception of knowledge, not lack of understanding but an adamant refusal to learn. Discarding outdated concepts is often more difficult than acceptance of new ideas. Do not forget that art and literature, commerce and culture, peace and tranquillity can only flourish, when basic minimal needs of the peoples are satisfied which requires optimal utilisation of scientific and technological advances.

It is not my intention to belittle the university system which has

enabled you to build your career for the future. On the other hand, my purpose has been to point out the deficiencies, which you have to make up to enable you to face the challenges in life. It is to convince you that education does not end with your degree, but is a continual life long effort, which must be pursued with a religious fervour, to enable you to keep yourself from becoming a victim of technological obsolescence. If only you realise, as Adi Sankara so beautifully summed up, "you are rooted in Heaven, you are in the nature of God; be satisfied with no lesser status and destiny" and replace the inferiority complex and defeatist spirit imbibed during the last three hundred years by a spirit of confidence and victory, of dedication and sincere effort, of determination and commitment, I have no doubt that you will succeed in enabling this nation, as an inheritor of proud civilization, to occupy its rightful place of pride in the community of nations

Education for Social Harmony

(Contd. on page 7)

This glorious vision of Dr Kothari and his Commission, forwarded in 1966, is a dream that has as yet to be brought into realisation. Meanwhile, not longer watching and waiting here, Dr. D S Kothari has left, to mingle with the ancestors!

To conclude, the gist of the argument is that, for the development of a cohesive social fabric, a vigorous cultural input needs to be integrated into the educational system, particularly given our multi-religious society. This input should aim at building bridges of understanding and ongoing dialogue, to be based on scientific-spiritual values such as tolerance, mutual respect, *Ahimsa*. Increasingly, dark forces of separatism, disinformation, wily politics, consumerism, etc. threaten to overwhelm the unity of India and her solidarity and security. These may be counteracted only by the administration of a massive dose of compulsory study and appreciation of India's rich and diverse cultural and religious heritage, as vitalized by universal ethical values and a scientific temper.

Needless to say, dependence on theoretical studies would not suffice by itself to vitally promote national educational objectives. A necessary complement is practical exercises-cum-applied work targeted at the service of the disadvantaged sections of society, whom Gandhiji called the *Daridranarayan*. This implies the orientation of teachers with a view to the building up of informed and committed cadres, plus the cooperation of, as well as supervision by, the local self-governing communities, their having the necessary freedom and powers to devise and introduce innovative educational strategies. All this is needed in order for us as a nation to equip ourselves with adequate resources and orientation so as to be able to meet the challenges of a rapidly changing world, plusating with transnational and transregional dynamics.

As others are realizing their educational dreams, so may we proceed from talk to action, realizing the dream of the Kothari Commission and the people of India. The best time for us to act is – now!

Generating Funds for Varsities

"Resource crunch and reduced financial support to the Universities and other educational institutions from the University Grants Commission, State Governments and other funding agencies are creating a crippling effect on the meaningful functioning of the Universities these days", observed Dr. S. Arya, Vice-Chancellor, Kurukshetra University. In order to generate their own resources and in keeping with the guidelines of UGC and State Govt, Dr Arya said that the Kurukshetra University had created a cell to develop liaison and establish contact between University's research activities and industries. According to him, their initial efforts have yielded some encouraging response from the industries as is evidenced by the fact that a prominent Electronic Instrumentation Industry has proposed to collaborate with Electronic Science Department and University Science Instrumentation Centre to develop few digital instruments of sophisticated nature. Another plastic industry has offered collaboration with the Department of Chemistry to provide consultancy to improve the quality and finishing of their plastic products. The industrialists have also offered to fund any R&D work to develop new technology relevant to the country's needs. Another offer relates to funding a project to develop motor protection design by the University Science Instrumentation Centre and Electronic Science Department.

It may be recalled that the State Governments and the University Grants Commission have been emphasising upon the Universities to generate their own resources from within the institutions and by raising

funds from outside. The internal resources are mainly limited to fees and funds chargeable from the students which unfortunately cannot match the cost effectiveness of education and thus cannot be hiked beyond a certain limit keeping in view the prevailing socio-economic structure of the society. Besides, the concept of private funding to the Universities is, too, not popular in the country and efforts, when made, had not produced much encouraging results. Contributions to educational institutions having been exempted from payment of the incometax with effect from the current financial year is, certainly, an encouraging step taken by the Central Government. But in case University research activities are linked with industries production by providing consultancy services to industries in relevant fields, it can convert our Universities into entrepreneur institutions and provide some funds required to maintain and update our laboratories. This, in turn, will help the industries to bring out quality products with improved efficiency. Consultancy services in the field of population control, effluent treatment, testing and calibration of products, preparation of data sheets and instruction manual for instruments, software development, etc. are some of the items which can be undertaken in our laboratories of University Teaching Departments. No doubts, it is likely to take sometime to give this direction to our institutions and is largely practicable in Universities located in metropolitan cities or big industrial towns. But in Universities or Institutes where it is feasible it will not only be able to generate resources, but will also encourage our researchers to make their research

and development activities in the Universities more meaningful and socially relevant.

AERB Funding for Research on Radiation

Atomic Energy Regulatory Board (AERB) is reported to have been trying to build up expertise in the fields of radioactivity measurement, radiation and nuclear safety by funding universities and other institutions. This was revealed by the AERB Secretary Dr K.S. Parthasarthy. These areas, he said, were exclusive to the Department of Atomic Energy (DAE), some of the areas such as those in medical physics do not normally get support from other funding agencies.

For example, the objective of one of the projects was to get data on reducing complications in radiotherapy by accurately measuring dose to important organs of patients undergoing radiation treatments, he said.

A computerised system is under development for providing information on nuclear and radiation safety, as well as on the industrial safety in the Department of Atomic Energy units. The system will also cover the regulatory aspects. The information will be provided in the forms of neat maps, charts and graphs.

One of the important functions assigned to the AERB was to promote safety research. Major thrust of AERB programmes was on safety-related research work in medical and academic institutes. Opportunities to do research in areas like medical physics and radiological physics are lacking in non-DAE institutions.

The main objective of the safety research programmes was to motivate physics and scientists to do research in the area of radiological, nuclear and industrial safety, and to

encourage interdisciplinary activities. It was quite important for the safe use of radiation in various fields.

National Awards for Science Popularisation

Knowledge of science and technology (S&T) is a major ingredient for future development, said the former Director General of the Council of Scientific and Industrial Research (CSIR), Mr. S. Vardarajan while giving away the National Awards for Science Popularisation in New Delhi recently.

Instituted in 1989 by the National Council for Science and Technology (NCST), the awards are given to individuals and organisations for popularising science, for the coverage given in the mass-media and for popularising science among children. The awards are given on the basis of the work done during the last five calendar years.

The Haryana Vigyan Manch in Rohtak and the Science Centre in Gwalior were given the award for popularising science. This award carries a cash prize of Rs. 1 lakh. Mr S. Rangarajan of Bangalore and Mr Dilip Mayengbam of Imphal jointly bagged Rs 50,000 for giving the best coverage in the mass-media, and Mr Sudhakar Bhalerao of Nasik was given Rs. 50,000 for popularising science among children.

Besides, 10 students were awarded the Department of Biotechnology (DBT) scholarships. Recognising the importance of developing adequately trained manpower in the fast-developing area of biotechnology, DBT has evolved an integrated programme of human resource development. The programme includes postgraduate/post-doctoral teaching in biotechnology, awards of biotechnology overseas and national associateships, short-term training courses, training programme for

technicians and industrial R&D personnel, lectures by eminent scientists and strengthening of the teaching of biology in schools, through development of computer software as teaching aid.

To motivate brilliant students to pursue the study of biology, in 1989, the Department announced a scheme to award a maximum of 10 scholarships from among the top 20 students in Biology in the All India Senior Secondary Certificate Examination at the 10 + 2 level. The scheme is meant for those who continue with undergraduate studies in Biology. The selected candidates are given a scholarship of Rs. 200 a month for three years along with a medal and a certificate.

Library Facilities, The NISSAT Way

With the introduction of a new concept called NISSAT Card, the library materials can now be made easily accessible to scholars, academicians, researchers, technologists, small and medium entrepreneurs, journalists and housewives. The National Information System for Science and Technology (NISSAT) scheme libraries will open up their facilities to bona fide users by giving them membership. An eligible Nissat member is a member of multi-libraries who does not have any kind of relationship with the organisations to which the libraries are affiliated.

The feasibility and design of the system was explored in depth by the Centre for Applied Systems Analysis in Development, Pune, under the overall guidance of Dr. R. Bandopadhyay, Director, CASAD and ex-Director, National Institute of Bank Management (NIBM). It was decided that to evolve an implicit mechanism for better utilisation of existing library services and capacities, the Nissat system be made operational.

The main features of the Nissat system are that it involves all the libraries in a given metropolitan city and its neighbourhood and is open to all the eligible users. Library facilities under the system are priced. The facilities include reading of books and referral facilities, borrowing of books and photocopy service.

The membership of Nissat can be obtained from a designated body like a commercial bank on a one-time payment of fees. Membership is open to institutional executives, businessmen, entrepreneurs in large, medium and small corporate units, faculty memberships of universities, colleges and scientists of R and D institutions, students and research scholars, journalists, unemployed and retired persons and housewives. The membership is in different grades designated by Nissat

A Nissat member does not require to pay any annual membership fee of the library concerned. Fresh membership card is required to be obtained when the "grade of membership" of the member changes. These members are required to pay according to the units of library facilities enjoyed by them. One unit of reading is defined as the use of the library for one full day. Similar is the case with borrowing.

The unit price of the facilities is paid in terms of coupon which will be available on sale from the designated body. Coupons collected in the library from the members are categorised as income of the library. Unit prices are different for different facilities and different grades of membership.

Two types of cards are available on sale from an authorised body against a deposit of Rs. 1,000 and Rs. 2,000 respectively. Security of the books is furnished in the form of cards to be submitted with the library at the time of borrowing. Elements

of insurance cover is in-built in the cards issued against the higher deposit

The Nissat card is being described as a Passe-Partout for library users. It has as its aim mobilisation of additional resources to reduce increasing pressure on the library budget. By utilising the Nissat card, non-library members are given easy access to library materials. The whole project is sponsored by the Department of Scientific and Industrial Research of the Ministry of Science and Technology.

Ambedkar Birth Anniversary Celebrations

The Kurukshetra University recently organised a Declamation contest to celebrate the Birth Anniversary of Bharat Ratna Baba Saheb Dr B.R. Ambedkar under the auspices of its Department of Youth & Cultural Affairs.

Inaugurating the Declamation contest Ch Ishwar Singh, Speaker, Haryana Vidhan Sabha, said that originally caste system was based on work culture and not on the basis of birth. But in due course of time, birth became the basis of caste system on account of the vested interest of the high class society. He called upon the Youth of the country, and more especially the students, to come forward to root out the prevailing caste system from the country and to propagate the thoughts of Dr Ambedkar.

Dr S. Arya, Vice-Chancellor, in his presidential address, revealed that Dr Ambedkar celebrated 4th May in Kanpur as 'Minority Day' which proved as a milestone in his political career. He also emphasised that caste system must be abolished for the overall development of the country. Dr. Arya asserted that blood groups of people were not identified on the basis of caste which proved that nature also

did not recognise any distinction among people on the basis of caste, colour and creed. He said that our real tributes to Dr. Ambedkar would be to bring about social and economic equity in Indian society by propagating the deeds and principles of Dr. Ambedkar.

Professor S.K. Singh, Dean Students Welfare and Dean, Faculty of Law said that the thoughts of Dr. B.R. Ambedkar were depicted in every article of our Constitution.

The topics of the declamation contest were 'Role of Bharat Ratna Baba Saheb Dr B R Ambedkar in protecting the Human Rights of the Weaker Sections of the Society in India' and "Contribution of Bharat Ratna Baba Saheb Dr. B R Ambedkar in Framing of the Indian Constitution"

A number of students from the University Teaching Departments and Colleges on the campus participated in the contest. Prof R D Sharma, Pro-Vice-Chancellor, Kurukshetra University, distributed the cash prizes and certificates to the winning participants.

Medical Libraries Convention

The National Convention and Workshop of Medical Library Association of India (MLAI) will be held in New Delhi during the third week of October 1993. The themes of the Convention are (1) Modern Technology and Health Science Libraries, and (2) Status of Health Science Libraries in India.

The sub-themes proposed to be discussed include (A) . (1) Library Automation (Computer and Libraries); (2) Online Searching; (3) Optical Media; (4) Telecommunication Technologies; (5) Library Networking (LAN, WAN), (6) Databases, (7) Image Processing, (8) Micrographics, (9) Audiovisual

Aids; and (B) : (1) Collection development; (2) Library finance; (3) Library services; (4) Library standards; and (5) Training.

There will be one day workshop on CD-ROM technology alongwith the convention. Both the experts and the vendors shall be invited to conduct the workshop.

Further details may be had from Dr. R.P. Kumar, Secretary, Medical Library Association of India, K-43, Kailash Colony, New Delhi-110 048.

Population Education Course

The Population Research Centre of Gauhati University, in collaboration with Population Education Resource Centre, North Eastern Hill University, Shillong recently organized a certificate course on Population Education. The course was inaugurated by Dr. M C Bhuyan, Registrar, Gauhati University. Dr M C Pandey, Director, Population Education Resource Centre, NEHU explained the objectives of the programme and purpose of holding such courses.

The topics discussed in the programme included (i) Population policy in India, (ii) Population trends in North-east India, (iii) Population and Education, (iv) Demographic terms used in population education, (v) Population and poverty, (vi) Population and resource, (vii) Population and development, (viii) Small family norms and STD, AIDS, and (ix) Creating awareness of population education through mass media.

World Population Conference

The International Conference on World Population will be held in New Delhi on October 24-27, 1993. The Conference will cover the issues in 5 sessions : The Reality of the problem - from Malthus to Sus-

tainable Growth; Linkages between Population and the Environment; Demographic Transition with particular reference to the Role of Women; and Family Planning and The Future.

The Conference will draw together the latest thinking and research in these areas and raise recognition of the problems and uncertainties that most urgently need attention.

The International Conference on World Population is a conference of the world's scientific academies jointly sponsored by Indian National Science Academy (INSA) alongwith the U.S. National Academy of Sciences, Royal Society, U.K.; and Royal Swedish Academy of Sciences, Sweden. The Conference is also being co-sponsored by other leading Academies representing all parts of the World and includes the Third World Academy of Sciences and FASAS.

Further details may be obtained from the Executive Secretary, Indian National Science Academy, Bhadur Shah Zafar Marg, New Delhi-110002.

Literacy Awards 1993

The Indian Adult Education Association invites nominations for 1993 Nehru and Tagore Literacy Awards instituted for outstanding contribution towards the promotion and development of literacy among adult men and women in India and for meritorious contribution towards promotion of literacy among women

The selection will be made by an Award Committee from out of the recommendations received. Further details and prescribed nomination forms can be had from the General Secretary, Indian Adult Education Association, 17-B, Indraprastha Estate, New Delhi-

110002. The last date for receipt of nominations by him is July 15, 1993.

Refresher Courses in Library & Information Science

The Department of Library & Information Science of the Aligarh Muslim University, under the auspices of Academic Staff College, proposes to organise two refresher courses in Library and Information Science during the session 1993-94. The first course on Academic Library Management : Problems & Prospects would be held from August 20 - Sept 17, 1993 while the second would be run from Jan 3 to February 2, 1994 and focus on Trends in Library & Information Services.

The Lecturers in Library Science and Librarians/Asstt. Librarians, etc. in pay scale of Rs 2200-4000 working in University and College Libraries with a minimum of 5 years experience are eligible to participate in the Refresher Course 85-90% of the seats are reserved for the catchment area (J&K State, Himachal Pradesh, Punjab, U.T. of Chandigarh & Delhi, Haryana, U.P., M.P., Rajasthan and Bihar) and 10-15% of the seats will be filled in on all India basis.

Further details and application forms may be obtained from the Director, Academic Staff College, or the Chairman, Deptt. of Library & Information Science, Aligarh Muslim University, Aligarh-202 002.

Faculty Enrichment Award 1993-94

Dr. T. Nageshwar Rao, Reader in the English Department, University of Hyderabad, is reported to have been chosen by the Canadian Government for the Faculty Enrichment Programme Award of Shastri

Indo-Canadian Institute, Canada for the year 1993-94.

The award would enable Dr. Rao to visit and lecture at various institutions in Canada including Toronto, York, Guelph, Queen's and Simon Fraser universities. He will also interact with academics of different institutions there in the areas of Indian and Canadian literatures.

UGC Team Visits Guwahati

A four member team of the U.G.C. recently visited Guwahati to assess the 8th plan development proposals of the left out colleges of the entire north eastern region. The Gauhati University was treated as the nodal agency for this purpose. During the course of the visit the Committee considered the proposals of the colleges and allotted grants on-the-spot. The Committee also held discussions with the Minister of Education, Assam, Commissioner, Education, Assam and D.P.I., Assam about various problems of education presently faced by the State. The Committee requested the Vice-Chancellor, Gauhati University, to revitalise the examination reform programmes of which once the Gauhati University was the pioneer under the leadership of Dr. H.J. Taylor, former Vice-Chancellor. The conferment of Autonomous Status to some selected colleges, establishment of a separate agency for holding the undergraduate examinations and some other academic matters also came up for discussion.

We Congratulate.....

Dr. Joginder Singh Puar who has been appointed Vice-Chancellor of the Panjab University, Patiala.

Countrywide Classroom Programme

Between 8th June to 14th June, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

8.6.93

"Filtration . A Laboratory Aid - I"

"Contract Act - V"

"What is Cerebral Palsy?"

9.6.93

"Pomology - The Science of Fruits"

"Missile Technology - I. The Systems Concept"

"Azihan Pebbles"

10.6.93

"Graphics with Microcomputers - II. User defined Graphics and Pop-up Menus"

"Byron..Byron..Byron - I"

"Objectives of Language Learning - I"

11.6.93

"Environment Education : In and Across the Borders - II"

"Starfinder - VI. How Big is the Universe"

"Newspaper Production Process"

12.6.93

"Film Criticism - II"

"New Horizons"

"Week Ahead"

13.6.93

No Telecast

14.6.93

"Little Knowledge is a Dangerous Thing - I"

"Managing Rural Business - II"

"Earthworms - I"

IIInd Transmission

4.00 p.m. to 5.00 p.m.

8.6.93

No Telecast

9.6.93

"Children Eye Care - I"

"Developmental Disorders"

"Ways of Thinking - V"

"Acupuncture"

10.6.93

"Electrochemistry"

"By the People - II"

11.6.93

"Film Criticism - II"

"New Horizons"

"The Week Ahead"

12.6.93

No Telecast

13.6.93

No Telecast

14.6.93

"A New Way to See - Scanning Tunneling Microscopy"

"TIMA - Quest for Excellence - I"

"Sustainable Agriculture by Daring Farmers - I"

News from abroad

US Assessing Professors

How productive are academics? How much undergraduate teaching do they do? How much money do they bring into the university? In short, are they worth taxpayers' money?

These and other questions are being asked by the University of Connecticut which has drawn up criteria against which professors will be measured and given scores on a scale of one to five in ten categories. The ten categories in which they are rated include research productivity, service to the state, national reputation, undergraduate teaching and postgraduate teaching. The university hopes that one department will

not be compared with another, but it is probably inevitable that league tables will appear.

Connecticut is thought to be the first university system in the United States to measure academics' performance in a quantitative way. Others may follow suit, prodded by state legislatures to justify the spending of large sums of tax dollars on higher education.

Behind the productivity ratings was a desire to rouse up the academic staff and to show the state legislature that professors were indeed worth the money spent on them.

"The country has been in recession and Connecticut led the way," said Richard Veilleux, a university spokesman. "Our budget has been chopped up pretty good since 1989. It was becoming increasingly clear that our pleas at the capital for more money each year were falling on deaf ears."

The brainchild of Thomas J. Tighe, the university's provost, the new scheme has been in preparation for two years. It has been drawn up with the cooperation of academics on the university senate - though by no means all professors are happy with it - and attempts to provide in-depth assessment

Professors in each department set their own goals, and are measured over the year on the extent to which they are meeting those goals. Their performance is explicitly linked to budget decisions.

The university has stated that it would be unfair, for example, to compare the amount of money brought in by history professors with that awarded to engineering because there is much less money available for the humanities

Some academics are critical of the system because they say it rewards quantity rather than quality.

American academics are used to being evaluated because most, if not all, university departments operate their own evaluation systems. What is new at Connecticut is that a university-wide performance rating has been developed. A number of states, including Pennsylvania, have shown an interest.

Jon F. Wergin, a professor who is researching departmental rewards and incentives at the American Association of Higher Education in Washington, said the Connecticut initiative reflected moves to ensure greater accountability for academic throughout the US.

The Australia Prize 1994

The 1994 Australia Prize will be awarded in the field of Sustainable Land Management. Among the topics that this field embraces are hydrology, water control, pest control, farm size, soils, climate prediction, sustainable agricultural projects and total catchment management.

The nominations for 1994 Australia Prize close on 31 July 1993.

The Australia Prize is an international award given by the Australian Government for an outstanding specific achievement in a selected area of science and technology promoting human welfare.

In the context, science encompasses natural and technological sciences, engineering and mathematics

The Prize carries \$250,000, not taxed in Australia, together with an inscribed medal.

The Prize may be awarded to an individual or awarded jointly to upto four persons who will share the prize money in equal parts. Persons who have already received a prestigious international award for the nominated achievement will not normally be considered for the award of the Australia Prize.

Awardees will normally be expected to attend the Prize-giving ceremony in Canberra and to participate in associated events. Airfares to, within and from Australia and all reasonable expenses arising from the award programme will be provided.

Written confidential nominations will be sought from appropriate learned and professional bodies and from individuals. Self-nominations will not be considered. The Committee reserves the right to seek further nominations.

For details, please contact the Public Affairs Section, Australian High Commission, 1/50-G, Shan-

tipath, Chanakyapuri, P.O. Box 5210, New Delhi-110 021.

Managing Research in Higher Education

The British Council in the United Kingdom will run a special course on "Managing research in higher education" at the University of Strathclyde, from 27 September-5 October 1993.

The course is designed for vice-chancellors, pro-vice-chancellors, deans and the other senior officers responsible for research strategies and technology transfer. It will be of equal interest to people responsible for the management of a national research policy

Some of the major topics proposed to be covered in the course are :

- the changing nature of research funding from UK government sources
- higher education institution research - its contribution to UK policies
- international collaboration - the European Community and beyond
- evaluation of research
- the transfer of technology - contract or collaborative research
- industry/commerce and its influence on the research portfolio of higher education institutes
- the role of consultancy
- teacher, scientists or entrepreneur - conflicts of role and priorities.

This is a self-financing course and applicants will need to find funding for both the course and international travel.

Further details can be obtained from the British High Commission, British Council Division, 17 Kasturba Gandhi Marg, New Delhi 110 001.

Central Institute of Fisheries Education (Deemed University) (I.C.A.R.)

Versova, Bombay-400 061
ADMISSION NOTICE 1993-94

An All India Competitive Written Examination for Admission to Ph.D Degree Courses in Fisheries Science for the academic session 1993-94 commencing from 1-10-1993 will be held on 29-8-93 at Bombay. The exact venue of examination will be indicated on the Admit Card.

Sr No.	Name of Discipline	No of Seats
1.	Ph.D (Fish & Fisheries Science)	5

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M Sc (FM/IFAM)/Aquaculture/Mariculture/Industrial Fisheries/Coastal Aquaculture, OR M.F.Sc., OR D.F.Sc., OR M.Phil., in Zoology or Biology with specialization in any branch of Fisheries Science with 60% marks or with O G P.A. of 7.5/10.00 or equivalent of first class in case of 5.4 and 3 point scale (for SC/ST candidates 55% marks or with O G P.A. 7.0/10.00 or passing grade for 5.4 and 3 point scale)

Minimum residential requirement of Ph.D. Course is 3 years (6 Semesters). Other than regular Semester Programmes, the candidates may have to undergo deficiency/remedial courses as per the advise of Advisory Committee.

Prescribed Application Form alongwith Information Bulletin for the Entrance Examination and Admission for the Ph.D Programmes can be obtained from the Sr. A.O./REGISTRAR, CIFE, Versova, Bombay-61. Request for Information Bulletin and Application Form may be made at CIFE to despatch the same by post positively the 15-7-93. But issuance of the Application Form and Information Bulletin will be continued at the CIFE till 31-7-93. When given in person at CIFE, the charge for the same will be Rs. 25/- in the shape of crossed Demand Draft, but if it is to be sent by post, crossed Demand Draft of Rs. 35/- will be required drawn in favour of Sr. Administrative Officer, CIFE, Bombay-400 061. Request for the through cheque of VPP will not be entertained. The Admit Card for the entrance examination to the eligible candidates will be sent by post. Any postal delay in reaching Admit Card will not be the responsibility of CIFE. The last date of receipt of Application Form is 31-7-93.

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TREASURE OF IDEAS

J.S. Rajput*

J.N. Kapur. *Inspiring Thoughts from Convocation Addresses*. Delhi, Mathematical Sciences Trust Society, 1993. Pp. viii + 164. Rs. 125/-

There are few earthy things more beautiful than the university : its great beauty lies in that it is a place where those who hate ignorance may strive to know the truth and those who perceive the truth, may strive to make others see it'. This is one of the 700 "Inspiring Thoughts from Convocation Addresses" by 'some of the greatest leaders of thought and action'. The Editor summarises his expectations in the preface - "These thoughts can inspire all workers in farms and factories, in offices and workshops and all seekers after birth (sic)" Alas, one wonders how many in farms, factories, offices and workshops would really be in a position to read these great thoughts. Even amongst those who graduated and had the privilege of being addressed to in one convocation address or the other, how many would indeed be willing to go through a volume which expectedly consists of concerns, advices, exhortations and of course idealistic suggestions. The printer's devil could have played its role realistically indeed if truth was reduced to 'berth' and not 'birth'!

The attempt by such a senior educationist, as Prof. J.N. Kapur is, to bring this volume as a collection

of real concerns of contemporary thinkers, scientists, administrators and educationists is, indeed, valuable. They have talked about the role of the university, the role young men and women are supposed to play in a dynamic society and their high hopes and expectations from these temples of learning and enlightenment. Convocation addresses are always addressed to the graduates of the year. Even during the first 25 years after independence, these 'graduates' of the year were not necessarily always full of hope and expectation as they were being awarded their degrees. The quality of higher education has already bared itself before these young people who were supposed to plunge in the market with a degree which rarely inspired confidence amongst those who were to give employment. University education prepared them only for the 'possible' employment or for eligibility to search an elusive job.

Before going into the contents of the presentation, one wonders why in a publication compiled and brought out in 1993 the cut off date is 1974. The reasons for this could possibly be the situation prevailing in most of the universities in academic, management and financial aspects. The mere thought of organising a convocation is seen by the authorities as a nightmare instead of an occasion of solemn responsibility. Majority of the universities are not keen about the convocations and these have really become far too infrequent.

One may not like to go into the details of the reasons behind these developments as these are well-known and well-understood. The seriousness with which these convocations, whenever held and organised, are viewed by the alumni is also marred by sporadic reports that degrees were returned or torn off by the graduates of the year. In this background the present effort would certainly achieve its objectives if it could inspire the thought of bringing back the respect and dignity which such occasions deserve in the universities.

As is expected, first 25 years after the independence were the years of transition and several significant changes took place in our policies on higher education. This was the time when expansion of institutions of higher learning took place on a large scale. We established new institutions particularly the pace-setting institutions in the areas of science, technology and medicine. Some of the these became part of the universities while others acquired an independent identity. When one oversees the present volume, one finds references to scientific and technological developments, need of social responsibility of such institutions, greater interaction with the community and concern for the rural poor. The young persons have been exhorted to follow the path of truth to prepare themselves for the changes that may not necessarily have a positive impact on the social and cultural scenario in the country. Large number of addresses emphasise very clearly what is expected of the young citizens of the country.

In the present context of serious apprehensions about the very survival of secularism in the country, one finds rare foresight and concern

* Joint Educational Adviser,
Department of Education, Ministry
of Human Resource Development,
Govt of India, New Delhi.

that was expressed as early as 1968 by Dr. P.B. Gajendragadkar in very specific terms :

"Those of us who believe in secularism must resist the growth of chauvinism, whether it is in the Hindu mind or in the Muslim mind. Communal chauvinism is entirely destructive of the doctrine of secularism, and education alone is the powerful cure for this malady" (378)*

In this context the enlightened Jurist had also eloquently emphasised the need for the education of the masses and role of the university and community :

"The Indian community, by and large, is a traditional community, backward-looking, relying more upon tradition and scriptures, upon customs and beliefs, than upon reason and rational considerations. The task of converting this traditional community into a modern community has to be undertaken by the university community. We must come to terms with modernism and unless we adopt a modern approach, rational and scientific, the future of India would not be bright. This process involves education of the masses, and that is where university education and the university community have to play an important role" (375)

The social responsibility of the university was highlighted by Prof V.K R V. Rao who would like universities to remember 'that they get their funds largely from tax payers and each one of them has the inescapable obligation of identifying itself with service to the society' Prof. D.S. Kothari puts the same in a much clear and exquisite manner .

"A university is after all an important part of the community, and cannot function in isolation. In fact it is a glaring weakness of our educational system that it is largely isolated from the life of the people, thus on the one hand

depriving the students of a living and creative contact with the community and on the other depriving the community of any direct advantage from the university. This artificial division must go, and our university system so geared as to create in each student a deep commitment to the welfare of the community in which he lives and provide him with concrete opportunities to translate this commitment into socially valuable activity." (100)

When this question of social obligations of universities is analysed, the need to establish linkages between Basic Education and Higher Education emerges prominently. This has, appropriately, received attention of several of these thinkers and educationists. S.S. Ray elucidates this in the following words :

"...While certainly higher education is the key to progress in a developing country, the firm foundation for higher education is school education and this has not yet come within the reach of every citizen of India. Nor has it acquired the quality which is to be aimed at, if it is to serve the purpose for which it is meant." (22)

The need of such linkages hardly needs any elaboration at this stage in the context of global initiatives towards universalisation of elementary education. The strategies of universities taking considerable responsibility in this regard have not only been evolved but successfully put into practice, though on a smaller scale. J.B. Kripalani, however, invites attention to another obligation of the institutions of higher learning, to expand the horizon of knowledge. He elaborates as to how this can be achieved by universities.

"Every university must, therefore, be equipped not only for imparting existing knowledge, but it must advance the bounds of that knowledge. This can be done when universities combine teach-

ing with research. It is unfortunate that many of our colleges and universities fail to do this. This failure is so great that the Government has started separate institutions for research work. To separate research from the universities is to impoverish them. Research institutions outside the university would lack the proper base and the atmosphere for research. Knowledge cannot stand still. It must be progressive or it will stagnate, as it did in India in the past, when the only task left for scholars was to write elaborate commentaries. Research cannot be carried on in a vacuum." (501)

The concerns for widening the horizons of knowledge and cognitive learning have their unquestioned significance. Equally important are the areas of non-cognitive development of the individual. S. Radhakrishnan concerned himself, with rare foresight, on these aspects as early as in 1965. He spoke of the need to revise the total outlook. He very clearly points out that :

"Literacy is not education, knowledge is not education but the growth of wisdom, the capacity to look upon other objects with compassion." (146)

It is unfortunate that many of these aspects have been ignored and the result is before all of us. The environment has changed in the universities and other institutions of higher learning. This would certainly have been a painful reality to Dr Radhakrishnan if he were to observe the position at the present juncture. Why have we landed ourselves in such a dilemma? Probably, V.V John has the answer :

"Let me begin by acknowledging that the older generation in this country has forfeited all right to preach to the young. In twenty two years of freedom, we have frittered away every advantage with which we started, except perhaps the amazing patience of

* Refers to sequence number in the book.

the common people....I shall, therefore, not presume to preach to you. Instead, I should, on behalf of the generation that has almost bartered away your birthright ask for your forgiveness. We have all deserved the penalty of a millstone round our necks and before the final immersion into the bottom of the sea, I should like to do one good deed by way of warning you of the dire peril you are in". (342, 343)

The concern of John is shared by Hidayatullah who puts full faith in the younger generation :

"Those elders have discredited themselves. You follow your own example and make a united country and make it quickly so that we may be able to undo all the

mischief that has taken place. It is up to the younger generation to show the way and it is for that reason that I appeal to you today." (447)

Hidayatullah further goes on to emphasize the importance of discipline in life. He considers it essential for success in life.

"In any achievement or work that you undertake, you must be disciplined in your relations with others and in this discipline comes some measure of respect, and that is respect for your country, respect for your elders, respect for your teachers, respect for the laws and respect for the feelings of others. If you discipline yourself in these, you will find that you will succeed much better than those who go forward

and try to elbow people out of the way and become indisciplined" (446)

One could certainly find ideas and expression of wisdom and practical relevance throughout this volume. Minor details like errors and misprints could be ignored. It is a concise and comprehensive treasure of ideas, thoughts and hope. I am not as optimistic as the editor regarding the range of readers, which to me would, indeed, be limited. If a group of thirty to forty Vice-Chancellors could discuss the contents for two to three days and come out with a concrete action plan for 'disciplining' the universities, it may be considered worth the efforts put in producing the volume. Maybe, the Association of Indian Universities could take the initiative.

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Marine Sciences

1 Anoop Kumar, T. Chemical and biochemical studies on marine invertebrates ecosanoids in *Loigo duvacei*. Calcutta

2 Kundu, Satyamkumar. Ecology of zooplankton in Hooghly Estuary, India and investigation on some of their chemical constituents. Calcutta

3 Panda, Debasish. Texture, mineralogy and chemical composition of Chilka Lake sediments. Berhampur. Dr R C Panigrahy, Reader Department of Marine Sciences, Berhampur University, Berhampur and Prof V Subramanian, Dean, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi

4 Sasamal, Sasanka Kumar. Hydrography and high salinity water formations in the western Bay of Bengal. Berhampur. Dr L V G Rao, Asstt Director, Division of Physical Oceanography, National Institute of Oceanography, Dona Paula, Goa

Biochemistry

1 Ansari, Ahfaz-ul-Haque. Biochemical studies on toxins produced by plant pathogens. Nagpur. Dr N V Shastri, Department of Biochemistry, Nagpur University, Nagpur

2 Junaid, Md Ahuddin. Mechanism of toxicity: Metabolic and receptor interactions of B-N-oxalyl-L alpha beta di-amino-propionic acid - the *Lathyrus sativus* neurotoxin. Osmania

3 Mahajan, Milind C. Metabolism of naphthalene and methyl-naphthalenes in *Pseudomonas putida*. Elucidation of catabolic pathways and purification and properties of 1,2-dihydroxynaphthalene dioxygenase. IISc

4 Maheswara Rao, D Leela. Studies on iodine metabolism: Role of dietary factors in endemic goiter - Biochemical mechanisms of goitrogenicity. Osmania

5 Puttaraju M. Studies on transfer RNAs of cucumber, *Cucumis sativus*. IISc

6 Shetty, Usha P. Studies on the role of estradiol 17 β in the regulation of synthesis of proteins by human placenta. IISc

7 Sowdhamini, R. Motifs in proteins: Disulphide constraints and their applications to protein engineering and peptide modelling. IISc

8 Taneja, Suparna. Effect of organic solvents on protein heat inactivation. Jamia. Prof Faizan Ahmad, Department of Biosciences, Jamia Millia Islamia, New Delhi.

Biology

1 Gopalkrishnan, Rahul V. Regulation of fibroin gene expression in *Bombyx mori*. IISc.

2 Patel, Hemantkumar Arvindbhai. Studies on lipid accumulation in an oleaginous yeast, *Rhodotorula minuta*. Patel. Dr Ramesh M Ray, Reader, Department of Biosciences, Sardar Patel University, Vallabh Vidyanagar

3 Ramesh G R. Molecular characterization of genes and promoters of mycobacteriophage 13. IISc

4 Suryanarayana, V V. Studies on the molecular mechanism of action of 5-fluorouracil. Altered functions of 5-fluorouracil substituted transfer RNA from rat liver. IISc.

5 Taneja, Reshma. Transcriptional regulation of tRNA genes in the silkworm, *Bombyx mori*. IISc

Botany

1 Adhikari, Bhupendra Singh. Biomass productivity and nutrient cycling of silver fir and Khasu Oak forests in Central Himalaya. Kumaun. Dr Y S Rawat and Dr S P Singh

2 Ansari, Athar Iftiaz. Purification and characterization of a protein kinase from dwarf pea epicotyls that phosphorylates and regulates RNA polymerase II activity in vitro. Delhi

3 Atal, Neelima. Cadmium induced changes in photosynthetic processes in primary leaves of wheat. Jamia. Dr P Pardha Saradhi, Department of Biosciences, Jamia Millia Islamia, New Delhi and Prof Prasanna Mohanty, School of Life Science, Jawaharlal Nehru University, New Delhi

4 Bal Krishan. Evaluation of different provenances of *Acacia nilotica* (L) Willd Ex Del in India. Kurukshetra

5 Bhattacharyya, Rina. Production of L-threonine by auxotrophic mutants of *Bacillus megaterium*. Burdwan. Dr Shiba Prasad Chatterjee, Prof, Department of Botany, University of Burdwan, Burdwan.

6 Biswas, Nivedita. Growth, physiology and metabolism of *Solanum khasianum* Clarke with special emphasis on accumulation of steroidal constituents. NBU

7 Gahalan, Anita. Leaf surface mycoflora of *Eleusine coracana* Linn in Kumaun Hills. Kumaun. Dr K N Pandey

8 Garkoti, Satish Chandra. High altitude forest of Central Himalaya: Productivity and nutrient cycling. Kumaun. Dr S P Singh

9 Joshi, Chandra Shekhar. Litter fall, decomposition and nutrient release in certain plantations of Kumaun Himalaya. Kumaun. Dr R P Singh.

10 Ketyl, Roma. Purification and characterization of poly (A) polymerase from germinated wheat embryos: Enzyme regulation by a fungal pathogen. Delhi.

11 Khatija Fatima. Melittopalynology of diverse floristic regions of Andhra Pradesh. Osmania.

12 Khola, Bhupendra Singh Taxonomic studies on the pteridophytic flora of Pithoragarh District of Kumaun, N E Himalaya. Kumaun. Dr N Punceta.

13 Madhav, N Venu Karyomorphological studies on two green filamentous algae. Kakatiya. Prof (Mrs) Vidyavathi, Head, Department of Botany, Kakatiya University, Warangal.

14 Madhava Naidu, M. Mutation breeding and tissue culture studies on chickpea, *Cicer arietinum* L. Gulbarga Dr Srinathrao, Department of Botany, Gulbarga University, Gulbarga

15 Majla, Bhagwan Singh Phytosociology, biomass structure and primary productivity in Oak-Pine forests in Kumaun Himalaya. Kumaun Dr G C Joshi

16 Mehta, Indra Singh Phytosociological analysis of forest communities lying between 2,000 - 4,000m altitudes in Kumaun Himalaya. Kumaun. Dr G C Joshi

17 Misra, Jahnaba Dynamics of weed populations in hill agroecosystems of Meghalaya. NEHU Dr H N Pandey, Department of Botany, North Eastern Hill University, Shillong.

18. Nagaraju, M Studies on genetic analysis of inheritance of resistance to bacterial blight and streak in rice Berhampur Dr P A Khan, Prof Department of Botany, Berhampur. Berhampur will not be eligible to appear for the Competitive Examination

The minimum age limit for admission to M Sc is 20 years upper age limit is 25 years (30 years for SC/ST Candidates) as on

Central Institute (Deemed to be University) Versova, ADMISSION FOR POST GRADUATE INLAND FISHERIES

Applications are invited for admission to One year postgraduate certificate course in Inland Fisheries Operational Management Centre for Inland Fisheries Operatives Training, Chinchhat, Lucknow (U P) due to start on 1-10-1993

QUALIFICATION

- I) A degree basic to Fisheries or Biological Science/ B.F.Sc./1 Certificate Course in Inland Fisheries Development and Administration offered by CIFE.
- II) One Year experience in Management of Inland Fisheries Operations

polluted legume: Histochemical and electron microscopical studies. Delhi

28. Suverna, B. Ecobiological studies on some polluted ponds and soils in Warangal City, Andhra Pradesh, India. Kakatiya. Dr M A Singara Charya, Department of Botany, Kakatiya University, Warangal

29. Tiwari, Punita. Plant regeneration from different explants in some members of leguminosae. Durgawati Dr Y K Bansal, Department of Biosciences, Rani Durgawati Vishwavidyalaya, Jabalpur

30. Yeshodharan, K. Taxonomical studies on lignicolous fungi from forests. Bhavnagar Dr H C Dube, Prof and Head, Department of Life Sciences, Bhavnagar University, Bhavnagar

Agriculture

1. Das, Pradyot Kumar Soil vegetation correlation in the arena of forest of Eastern Himalayan regions. Calcutta.

2. Devi Singh Effect of pruning intensities under different levels of nitrogen on growth, yield and quality of peach, *Prunus persica* Batsch cv July Elberta. Y S Parmar Dr Jagmohan Singh Chauhan, Department of Fruit Culture and Orchard Management, College of Horticulture, Nauni, Solan

3. Harpinder Singh Somatic cell and protoplast culture of citrus rootstocks and scion cultivars. PAU

4. Patil, Shivaji Ramchandra Studies on carbon monoxide sensitivity of cytochrome c oxidase in the leaves of C3 (wheat, chickpea and groundnut) and C4 (maize, sorghum and pearl millet) plants. M P Krishi Dr S V Munjal

5. Rati Ram Energy analysis of an integrated rice milling system. PAU

6. Uma Rani, K. Genetic and molecular basis of water stress tolerance in rice. Osmania.

Zoology

1. Basu, Shyamal Kumar The malformation of eye in human encephalic foetuses. Visva-Bharati Dr A K Nandi, Department of Zoology, Visva Bharati, Santiniketan and Dr A K Aditya, Department of Zoology, Visva Bharati, Santiniketan

2. Bhaskar Reddy, P. Physiological and biochemical changes in jungle bush quail, *Perdicula asiatica asiatica* with relation to photoperiod. Vikram Dr B R Das, Department of Zoology, Utkal University, Bhubaneswar

3. Bisht, Satpal Singh The role of earth worms (megascolecidae) in conversion of nutrients in a crepland and grassland soils in Kumaun Himalaya. Kumaun Dr B R Kaushal

4. Dode, Chhaya Ramrao Effect of organotin constituent copper on the physiology of fresh water prawn, *Macrobrachium hispanica*. Marathwada. Dr R Nagabhushnam, Prof and Head (Retd), Department of Zoology, Marathwada University, Aurangabad

5. Elizabeth, Konda Mary Studies on the effects of some anthelmintics on helminths of *Calotes versicolor* Daud with special reference to the cestode, *Oochoristica indica* (Cyclophyllidae).

6. Gaur, Sunil Kumar. Studies on reproduction in relation to the hypophysis and epiphysis of a freshwater teleost, *Barbus wyna Hamilton*. Kumaun Dr S S Pathan.

7. Hota, Jagannath. A study of chromosome complements and patterns in some Indian Orthoptera. Berhampur Dr S C Patnaik, Lecturer, Department of Zoology, Govt Science College, Chatrapur.

8. Joshi, Dhru. Biochemical variations in some endogenous groups of Haryana. Kurukshetra

9. Majumdar, Mita. Studies on the ecology and control of *Tetranychus neocaledonicus* Andre (Tetranychidae: Acarina) in Tripura. Calcutta.

10. Mitra, Krishna. Purification of yolk protein(s) and its correlation with vitellogenin through elisa in *Channa punctatus* Bloch. Visva-Bharati. Dr Panchanan Nath, Department of Zoology, Visva-Bharati, Santiniketan.

11. Nayak, Bijay Kumar. Nematoide parasites of some vertebrates of Orissa. Burdwan Dr Giridhari Majumdar, Prof, Department of Zoology, University of Burdwan, Burdwan.

12. Patnaik, Elizabeth. Studies on the ecological and experimental aspects of certain fresh water algae in fish ponds at Sambalpur, India. Sambalpur Dr A K Patra, Reader, Post Graduate Department of Zoology, Utkal University, Bhubaneswar.

13. Ray, Bikash. To evaluate certain aspects of development of deepwater rice-fish culture with a note on the possible pesticide hazards. Burdwan Dr Deb Kumar Choudhury, Prof, Department of Zoology, University of Burdwan, Burdwan and Dr P K Mukhopadhyay, Head, Division of Nutrition, CIFAL, Bhubaneswar.

14. Saxena, Tanushri. Luteinizing hormone-releasing hormone (LHRH) and its analogues: In vivo and in vitro studies on seasonal and photo-induced variations in the pituitary response in male Indian weaver bird, *Ploceus philippinus*. Delhi.

15. Sinhababu, Dhuryat Prasad. Studies on the role of the hypothalamo-hypophyseal complex in the reproducing behaviour of an Indian freshwater major carps *Labeo rohita* Ham. Burdwan Dr Deb Kumar Choudhury, Prof, Department of Zoology, University of Burdwan, Burdwan.

16. Suprabha, P G. An analysis of morphometric variability of some dipteran vectors of human health importance in relation to their vectorial capacity and ecology. Delhi.

17. Thakur, Saheb Singh. Ecological studies effects on reproduction. H S Gour Dr V S Basu, Lecturer, Department of Zoology Dr H S Gour Vishwavidyalaya, Sagar

18. Vaidehi, Jonnalagadda. Myxosporean parasites of fishes of Chilika Lake, India. Andhra.

19. Vijaya Rao, E G K. Histological and histochemical studies in a fresh water bivalve. Kakatiya. Prof T Rajendranath, Department of Zoology, Kakatiya University, Warangal.

Medical Sciences

1. Basu, Minati. Leucorrhoea: A clinico bacteriological study. Calcutta

2. Das, Karobi. A prospective study of psychological disorders in women during pregnancy. PGI

3. Jain, Renu. To study the host immune response to HSV-II antigen, early and complete, in patients with early and invasive carcinoma of the uterine cervix. Delhi.

4. Lahiri, Subbar. Thyroglobulin immunoactivity and its physiological consequence in rabbit. Calcutta.

5. Madadi, Ali Javed. A study of trace elements, zinc, copper and magnesium in some skin diseases and malignancies. Devi Ahilya. Dr N C Sethi, Skin Specialist, M G M Medical College, Indore

6. Purushotham Rao, K. Studies on some pharmaceutical formulations. Gulbarga. Dr (Mrs) N M Sanghavi, Reader, Department of Pharmacy, University of Bombay, Bombay

7. Radhakrishnan, M. Studies on cloretilins as plasticizers in polymeric film coated tablets. Kakatiya. Dr P Amritewar, Reader, Department of Pharmacy, College of Pharmaceutical Sciences, Kakatiya University, Warangal.

8. Rama Krishnam, Yellala Sri. Pharmacokinetic and pharmacodynamic interactions of sulphonylureas with other drugs. Andhra

9. Shekhar, Archana. Effect of various pharmacological interventions on reperfusion induced arrhythmias. PGI

10. Taneja, Veena. Immunogenetic studies in familial rheumatoid arthritis in India. Delhi.

Veterinary Sciences

1. Naresh Prasad. Utilization of kesum, *Schleichera oleosa* cake as a feed replacer in swine rations. Bursa Agri

2. Patel, Mitra Bhanu. Biokinetics of nalidixic acid in goats. Bursa Agri.

tein kinase from dwarf pea epicotyls that phosphorylates and stimulates RNA polymerase II activity in vitro. Delhi

3. Atal, Neelima. Cadmium induced changes in photosynthetic processes in primary leaves of wheat. Jamia Dr P Pardha Saradhi, Department of Biosciences, Jamia Millia Islamia, New Delhi; and Prasanna Mohanty, School of Life Science, Jawaharlal Nehru University, New Delhi

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Central Institute of Fisheries Education

(Deemed University)

(I.C.A.R.)

Versova, Bombay – 400 061

ADMISSION NOTICE 1993-94

An All India Competitive Examination for Admission to M.Sc. (Fisheries Management) and M.Sc (Inland Fisheries Administration Management) at Central Institute of Fisheries Education, Versova, Bombay, starting from 1.10.1993 will be held on 29-8-93 at Bombay & Calcutta. The exact Venue of examination will be indicated on the Admit Card

The candidates having B.Sc. degree (with Zoology/Botany/Chemistry/ Fisheries) will be eligible to appear for the Competitive Examination, if they have atleast 60% marks in aggregate or equivalent Overall Grade Point Average (OGPA) (In case of SC/ST candidates 55% marks or equivalent OGPA) Candidates having B.F.Sc. degree need to have minimum 55% marks in aggregate or equivalent Overall Grade Point Average of 6.9/10.00, 3.44/5.00, 2.75/4.00 or 2.06/3.00 (for SC/ST candidates 50% marks or equivalent OGPA of 6.2/10.00, 3.12/5.00, 2.50/4.00 or 1.87/3.00)

Candidates passing out from the education system of 10+2+4 or 10+2+3 or 10+1+4 for the first degree course will be eligible to seek admission to M.Sc. Programmes. Candidates with 10+2+2 will not be eligible to appear for the Competitive Examination

The minimum age limit for admission to M.Sc. is 20 years and upper age limit is 25 years (30 years for SC/ST Candidates) as on 31st

December of the preceding year of admission.

Minimum residential requirement for M.Sc. course is two academic years in case of B.F.Sc. degree holders (10+2+4), and 3 years for other degree holders and B.F.Sc. degree holders with 10+2+3

Prescribed Application Form alongwith Information Bulletin for the Competitive Examination and admission for M.Sc. Programmes can be obtained from the Sr. A.O./Registrar, Central Institute of Fisheries Education, J.P. Road, Kakoni Camp, Seven Bungalows, Versova, Bombay-400 061

Application Form and Information Bulletin will be issued at CIFE upto 15th July, 1993 by post and upto 31-7-93 in person. When given in person at CIFE, the charges for the same will be Rs 25/- in the shape of Crossed Demand Draft, but if it is to be sent by post, Crossed Demand Draft for Rs 35/- will be required to be drawn in favour of "Sr. Administrative Officer, Central Institute of Fisheries Education, Versova, Bombay-400 061". Request for this through Cheque or VPP will not be entertained. Admit Card for the entrance examination to the eligible candidates will be sent by post. Any postal delay in receiving the Card will not be the responsibility of CIFE. The last date for receipt of Application Form will be 31-7-1993.

Central Institute of Fisheries Education

(Deemed University)

(I.C.A.R.)

Versova, Bombay-400 061

ADMISSION FOR POST GRADUATE CERTIFICATE COURSE IN INLAND FISHERIES OPERATIONAL MANAGEMENT

Applications are invited for admission to One year postgraduate certificate course in Inland Fisheries Operational Management at Centre for Inland Fisheries Operatives Training, Chhina, Lucknow, (U.P) due to start on 1-10-1993

QUALIFICATION

- I) A degree basic to Fisheries or other Biological Science/ B.F.Sc./1 Year Certificate Course in Inland Fisheries Development and Administration offered by CIFE.
- II) One Year experience in Management of Inland Fisheries Operations

DESIRABLE : Post-graduate qualifications in Fisheries Science

NUMBER OF SEATS : 5 (FIVE)

Candidates are advised to send their application on plain paper indicating their name in Block letters, address, date of birth, whether SC/ST, qualification, percentage of marks secured together with attested copies of degree certificates and marks sheets, so as to reach the Sr. Administrative Officer, Central Institute of Fisheries Education, J.P. Road, Kakoni Camp, Seven Bungalows, Versova, Bombay-400 061 within 15 days after release of the advertisement

Indian Association for the Cultivation of Science Jadavpur, Calcutta-700 032

Dr. Mahendra Lal Sircar Award

The Indian Association for the Cultivation of Science (I.A.C.S.) instituted in 1984 the Mahendra Lal Sircar Award on the occasion of the celebration of the 150th Birthday of Dr. Mahendra Lal Sircar, the Founder Secretary of the Association.

Nomination for the Award as per 'B' below for the years 1988, 1989, 1990, 1991, 1992 and 1993 are hereby invited.

A. The Award

- (i) The name of the Award shall be the Mahendra Lal Sircar Award.
- (ii) The award shall be given each year to a deserving scientist who should be upto 55 years of age on the 31st December of the year of award and a citizen of India.
- (iii) The award shall be given alternately in Chemistry and Physics with 1988 as the year for Chemistry.
- (iv) The award shall consist of Rs. 15000/- and a citation.

B. Nomination for the Award

1 The following categories of persons shall be eligible to nominate candidates for the award

- (i) Presidents of Scientific Societies of All India character;
- (ii) Vice Chancellors of the Universities;
- (iii) Directors of Indian Institutes of Technology;
- (iv) Director General of CSIR.
- (v) The Secretary, Department of Science & Technology;
- (vi) The Director, BARC.

- (vii) The Directors of CSIR Laboratories, Saha Institute of Nuclear Physics, Bose Institute, Physical Research Laboratory, Tata Institute of Fundamental Research, Indian Institute of Science, Bangalore, Indian Statistical Institute, Calcutta, Institute of Plasma Physics, Ahmedabad, Indian Space Research Organisation, Department of Atomic Energy, Institute of Physics, Bhubaneswar, Defence Research Laboratories and S.N. Bose National Centre for Basic Sciences, Calcutta.

Each nomination as per Proforma given below indicating the year of nomination, should be accompanied by a biographical sketch, list of publications and highlights of the research work carried out by the candidates and reprints of important publications. The nomination may be sent along with ten copies of the statement of work of each nominee to the Director, IACS, Calcutta-700 032, by 15th July, 1993.

The nomination already received against earlier invitations for the years mentioned above will also be considered for the award.

PROFORMA FOR NOMINATION

(10 copies must be forwarded)

- 1 Name of the nominee
- 2 Date of birth
- 3 Present position and official address
- 4 Positions held earlier (chronological order)
- 5 Discipline under which to be considered, Physics/Chemistry
- 6 Academic Qualifications
- 7 Significant research contribution by the nominee during the last ten years preceding the year of the award
- 8 Whether the contributions have already been recognised by awards
- 9 List of publications during the last ten years and reprints of outstanding work
- 10 Book published if any
- 11 Patents taken if any
- 12 Any additional information of relevance
- 13 Year of consideration

Sponsor's Signature

Place

Sponsor's name and designation

Date